HLA Protocol Catalog

Presented to:

AMG-9

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The DIS Data Dictionary/ Protocol Catalog (DD/PC)

- Initiated by STGPA at the March 95 DIS workshop .

- Funding has been provided by DMSO.

- Design and implementation by the Army's Joint Database Elements (JDBE) project at Ft. Huachuca.

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Key Characteristics:

- **Unrestricted access via the WWW**

- **Maintenance/Configuration Control assumed by the DIS WS (March 96).**

- **No IEEE balloting required for changes to the database.**

- **Supersets containing classified data to be developed and maintained by government agencies as necessary**

- **March 96 version to contain all DIS 2.x series data items, PDUs, and protocols**

- **Implemented as Microsoft Access database on IBM compatible PC**

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Proposed HLA Extensions/ Modifications:

- Shorten the name to "Protocol Catalog"

- Restructure the database to accommodate ALSP messages and ALSP Object Interaction Protocols (OIP)

- Restructure the database to accommodate HLA/DIS 3.x PDUs and HLA OIPs

- Restructure the data item definition component of the database to permit multiple presentations of data items

Logical HLA PC Structure

DIS 2.x Protocols (a.k.a. protocol families)	ALSP Object Interaction Protocols	HLA/DIS 3.x Object Interaction Protocols
DIS 2.x PDUs	ALSP Messages	HLA/DIS 3.x PDU

Data Item Definitions (a.k.a. dictionary)

Modification to Include ALSP Messages

- **Present DD/PC structure accommodates ALSP data item definitions - No mods required**
- **Present DD/PC structure does not accommodate ALSP messages, however:**
  - **ALSP messages are similar to DIS 2.x PDUs**
  - **The database structure modifications are probably modest.**

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Modification to Include ALSP OIPs

- **Present DD/PC structure does not accommodate ALSP OIPs**
- **ALSP OIPs are quite different from DIS 2.x Protocols**
  - **ALSP OIPs define a sequence of events and object states that govern the flow of messages**
  - **The database structures needed to describe the proper sequencing of messages will require a significant design effort.**
  - **However, this design effort will be directly attributable to the HLA/DIS 3.x OIP definitions.**

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Modification to handle HLA/DIS 3.x PDUs and OIPs

- **Present DD/PC structure accommodates HLA/DIS 3.x data item definitions - No mod required**

- **Present DD/PC structure does not accommodate HLA/DIS 3.x PDUs. However:**
  - **They will be similar to DIS 2.x PDUs**
  - **Required database structure modifications are probably modest.**

- **Present DD/PC structure does not accommodate HLA/DIS 3.x OIPs. However:**
  - **The structures needed to define them are the same as those needed for ALSP OIPs.**

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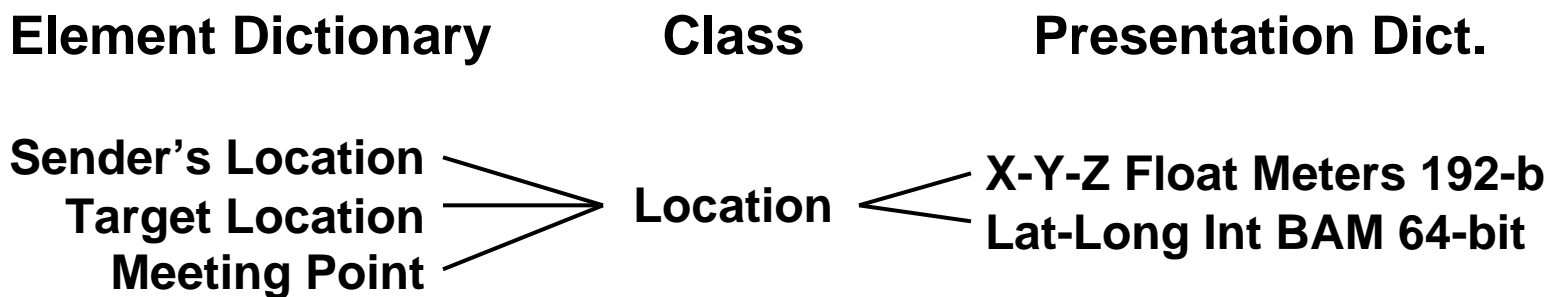# Modification to Handle Multiple Presentations (MP)

- **Will require a moderate effort**
- **Will provide a cleaner design**
- **Will make the data structures more flexible**
- **Will make future modifications more straightforward.**

Current DD/PC Design

- **Single structure to define all data items**
- **Multiple presentations are handled as additional data items (e.g. LOC_XYZ_192 and LOC_LAT_LONG_64)**
- **Which to use is part of the PDU definition**
- **PDU definition may also define (or imply) meaning for the use of a data item (e.g. sender's location, target location).**

Proposed Design

- **Uses two components for data item definition**
  - Element Dictionary, has separate entries for each distinct use of the item
  - Presentation Dictionary, has separate entries for each presentation

- **The two components are linked by a Class construct as indicated below:**

Element Dictionary	Class	Presentation Dict.
Sender's Location Target Location Meeting Point	Location	X-Y-Z Float Meters 192-b Lat-Long Int BAM 64-bit

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FOM Builder

Library of FOMS

Simulation Object Models

Protocol Catalog

Resource Repositories

Workstation FOM Development Tool

Common API

Fed Development

Federation Object Model

Federation Design

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